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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/521,901	03/09/2000	Tsutomu Yamakawa	0039-7608-2S	2826

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EXAMINER

LEE, SHUN K

ART UNIT PAPER NUMBER

2878

DATE MAILED: 06/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/521,901

Applicant(s)

YAMAKAWA, TSUTOMU

Examiner

Shun Lee

Art Unit

2878

-- Th MAILING DATE of this communication appears on the cover sheet with the correspond nce address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2002 & 31 March 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6,8 and 22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6,8 and 22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 March 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 19.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The corrected or substitute drawings were received on 31 march 2003. These drawings are acceptable.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-6 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Kamae *et al.* (US 4,857,737).

In regard to claims 1 and 2, Kamae *et al.* disclose a nuclear medical diagnostic apparatus comprising:

- (a) a radiation detector (e.g., S1 in Fig. 2) in a form of a single layer including a plurality of semiconductor cells (*i.e.*, diodes; column 1, lines 51-56) that (1) are arranged in a matrix, (2) detect radiation separately, and (3) output signals representing an energy of the radiation separately (column 6, lines 6-58; column 7, lines 35-55);
- (b) a selection circuit (*i.e.*, suitable electronic circuit and computer; column 7, lines 35-41) which, in order to select, among events wherein the radiation is detected, a specific event wherein radiation derived from a radio-isotope injected into a subject is detected (column 1, lines 21-40) and a total energy of not less than two

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- respective signals substantially simultaneously (*i.e.*, chronological order is not directly detected since it is extremely difficult to determine the sequence of signals when the plurality of reactions are measured almost simultaneously; column 6, lines 51-54; column 7, lines 10-16; and column 9, lines 8-11) output from not less than two semiconductor cells falls in a predetermined energy window (column 7, lines 16-19 and 47-68);
- (c) a position calculation circuit (*i.e.*, suitable electronic circuit and computer; column 7, lines 35-41) which determines (column 8, lines 1-24) the sequence of the reactions and thus calculates an incidence position (*i.e.*, coordinates of the first reaction point x_1, y_1, z_1) based on a position selected from positions (*i.e.*, coordinates of the i -th reaction point x_i, y_i, z_i ; column 7, line 54) of said not less than two semiconductor cells;
- (d) a counting circuit (15 and 16 in Fig. 7) configured to count the specific event in association with the calculated incidence position (column 8, lines 61-67); and
- (e) a circuit (15 and 16 in Fig. 7) configured to generate a distribution of radio-isotope in the subject on the basis of a counting result (column 8, line 67 to column 8, line 2).

In regard to claims **3-6** which are dependent on claim 2, Kamae *et al.* also disclose (column 8, lines 1-24) that said position calculation circuit selects one semiconductor cell (*i.e.*, coordinates of the i -th reaction point x_i, y_i, z_i ; column 7, line 54) from said not less than two semiconductor cells on the basis of an energy (*e.g.*, a minimum energy or a maximum energy depending on the Eq. in column 8) of the not

Art Unit: 2878

less than two signals and the positions (e.g., a first area and a second area) of said not less than two semiconductor cells.

In regard to claim **22**, the method steps are implicit for the apparatus of Kamae *et al.* since the structure is the same as the applicant's apparatus of claim 1.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kamae *et al.* (US 4,857,737) in view of DiFilippo *et al.* (US 5,793,045).

In regard to claim **8** which is dependent on claim 1, the apparatus of Kamae *et al.* lacks that the selection circuit is configured to calculate time differences between a signal output from one of said plurality of semiconductor cells and signals output from remaining cells of said plurality of semiconductor cells. DiFilippo *et al.* teach an internal coincidence circuit configured to determine a time difference among a plurality of signals output from said radiation detector in order determine if signals occur within a predetermined time interval (column 5, lines 33-44). Therefore it would have been obvious to one having ordinary skill in the art to provide an internal coincidence circuit in the apparatus of Kamae *et al.*, in order to determine if signals occur within a predetermined time interval as taught by DiFilippo *et al.*

Response to Arguments

4. Applicant's arguments filed 31 March 2003 have been fully considered but they are not persuasive.

In response to applicant's argument (remarks filed 31 March 2003) that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (*i.e.*, consisting of a single radiation detector in a form of a single layer) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). As noted by applicant (second paragraph on pg. 5 of remarks filed 31 March 2003), the '737 patent is directed to a gamma ray detecting unit formed of a plurality of radiation detectors arranged in layers. However, the features upon which applicant relies (*i.e.*, consisting of a single radiation detector in a form of a single layer) are not recited in the amended claims. Therefore, applicant's arguments are not persuasive.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

Art Unit: 2878


mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shun Lee whose telephone number is (703) 308-4860. The examiner can normally be reached on Tuesday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (703) 308-4852. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

SL
June 11, 2003


DAVID PORTA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800